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# INFORMATION REQUIREMENTS FOR REGULATED PIPELINES



Alberta  
ENVIRONMENT



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## INFORMATION REQUIREMENTS FOR REGULATED PIPELINES

APRIL, 1982

**Alberta**  
ENVIRONMENT  
Land Reclamation Division  
Regulated Operations Branch





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## INTRODUCTION

### **What is the authority for issuing these information requirements?**

Part 2 of The Regulated Oil and Gas Pipeline Surface Operation Regulations (*The Land Surface Conservation and Reclamation Act*).

These information requirements must be met before an application is formally reviewed. The Minister of Environment may grant or refuse a Development and Reclamation (D & R) Approval with or without conditions.

### **Which projects do these information requirements apply to?**

A pipeline which is over both 150 mm in diameter and 16 km in length.

Any system containing a pipeline which meets the above criteria requires a D & R Approval for the entire system, including smaller and shorter lines. For example, gas gathering systems which have, in total, at least 16 km of 150 mm line require a D & R Approval.

### **What is the purpose of these information requirements?**

To minimize adverse environmental impacts by incorporating environmental concerns into the planning and construction of pipelines through the D & R Approval process. These Information Requirements replace "Guidelines for the Preparation of Pipeline Development and Reclamation Applications Environmental Reports", February, 1980.

These information requirement guidelines have been developed to assist the industry in the interpretation of the information requirements, outlined in Energy Resources Conservation Board (ERCB) Guide G-24, Pipeline Applications To The ERCB, A Guide to Content.

### **What approach have we taken in these information requirements?**

We have attempted to incorporate environmental concerns into the standard engineering practice of preparing an application for the ERCB permit to construct. However, early involvement of your Environmental Department or Consultants is recommended to save time and possible delay in the review of your application. The preliminary project meeting with us will commence a co-operative effort which will continue through project completion.

### **Are approvals from other agencies still necessary?**

Yes. Applications for ERCB permits and D & R Approval should be submitted to the ERCB simultaneously. D & R Approval will follow the ERCB permit to construct but must precede application for any Pipeline Agreement (PLA) required from Energy and Natural Resources (ENR).

D & R Approval will facilitate the acquisition of other environmentally related permits and approvals such as the PLA, Water Resources permits and others. See *Environmental Operating Guidelines for the Alberta Petroleum Industry*, by the Canadian Petroleum Association, for a complete listing of permits and licences.



## PREPARING THE APPLICATION

### What we need from you

- purpose of the application
- location of project, size and length of line
- contact person for engineering matters
- contact person for environmental matters (in-house department or consultant) and an alternate
- a tentative project schedule
- attendance at a preliminary project meeting
- 10 copies of your application

### What you need from us

At the preliminary project meeting, Alberta Environment will advise the applicant on:

- the time requirements for application review. Normally allow 45 days for a complete application to be reviewed;
- the names of government contact persons and an alternate;
- preliminary environmental concerns and the degree of applicability of these Information Requirements depending upon the specific pipeline proposal

### How to get your application approved

- follow the steps on the attached pages.
- *ensure the application is thorough with respect to major environmental concerns, but relevant and concise as possible.*
- ensure that the information is prepared by a suitably-qualified professional.
- maintain regular communication with the government contact person throughout the study. Co-operation is essential.

### For more information, contact:

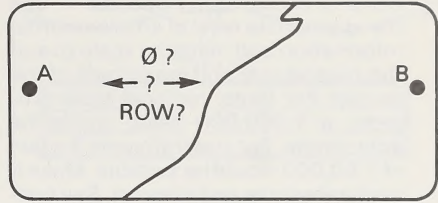
Head, Regulated Operations Branch,  
Land Reclamation Division,  
Alberta Environment,  
11th Floor, Oxbridge Place,  
9820 - 106 Street,  
Edmonton, Alberta T5K 2J6  
Telephone 427-6322



## OVERVIEW OF TYPICAL APPLICATION PROCESS

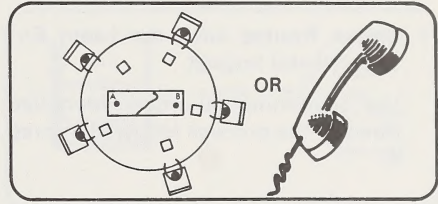
### 1. Development Proposal

Purpose, terminal locations, commodity, length, diameter, ancillary facilities, timing.



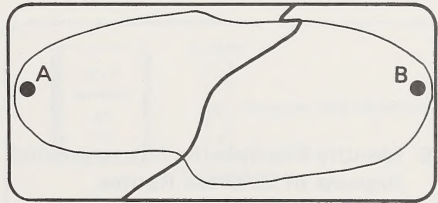
### 2. Preliminary Project Contact

Contact Alberta Environment to discuss the pipeline proposal, preliminary environmental concerns and applicability of these Information Requirements.



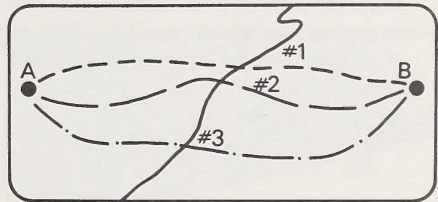
### 3. Define Study Area

Describe the rationale for setting the study area boundaries. Considerations could be economics, intermediate tie-in points and natural or administrative boundaries (e.g. large lakes or provincial borders).



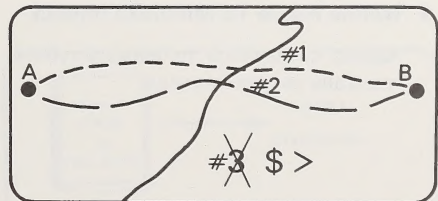
### 4. Identify Alternative Routes

On the basis of preliminary engineering and cost, system interrelationship, government regulations and preliminary environmental concerns. Follow existing rights-of-way if possible.



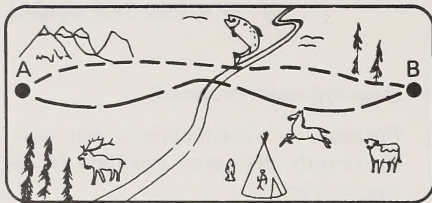
### 5. Select Most Technically Feasible Routes

Using criteria from factors described in Step 4.



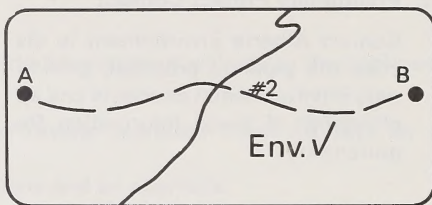
## 6. Describe and Analyse Existing Environment

Refer to checklist in Appendix 1. Use the appropriate level of environmental information and mapping scale to suit the relative size and magnitude of the project. For large, regional scale projects, a 1:250,000 scale would be appropriate. For small projects, a scale of 1:50,000 would be suitable. Make it comprehensive and relevant. See contact agencies in Appendix 2.



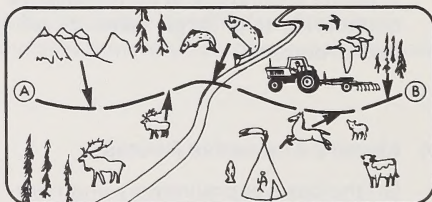
## 7. Select Routes with the Least Environmental Impact

Use environmental criteria identified through the process followed in Step 6.



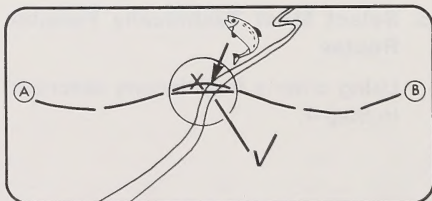
## 8. Identify Site Specific Environmental Impacts of Selected Routes

Use more detailed environmental information from government agencies, libraries and original field work. The mapping scale will be 1:50,000 to 1:10,000 depending on the amount of detail.



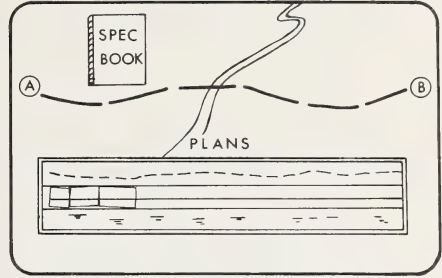
## 9. Refine Route To Minimize Impact

Adjust centre-line to avoid environmentally sensitive areas.



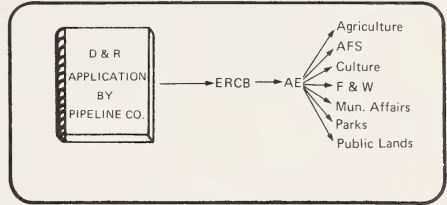
**10. Prepare Environmental Protection Plan**

Consisting of environmental construction specifications for the entire route, which are designed to avoid or minimize environmental impacts through changes in timing of construction or construction methods. Show the information on your construction plans accompanied by "typical" drawings and written specifications incorporated into the Construction Specifications Book.



**11. D & R Application Submitted and Reviewed**

The application should be both comprehensive and relevant.

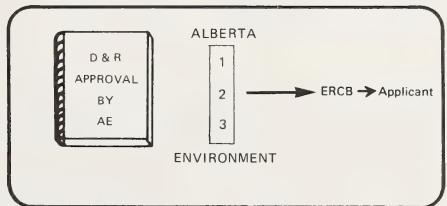


**12. D & R Approval**

Approval may be:

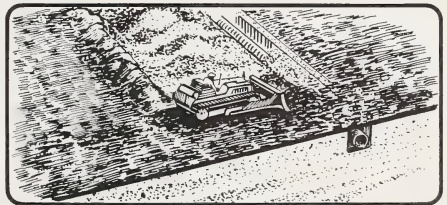
1. issued
2. issued with conditions; or
3. denied.

Note: If an approval is issued, a security deposit will normally be required.



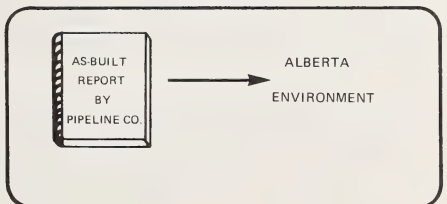
**13. Put The Environmental Protection Plan Into Practice**

Implement the environmental construction specifications such as stripping and replacing topsoil and protecting streams from erosion.



**14. Prepare an As-Built Environmental Report**

If requested, prepare a report describing environmental impact and lessons learned for future pipeline projects.







## DEVELOPMENT AND RECLAMATION (D & R) APPLICATION PROCESS

### A. Project Initiation

The Applicant should first establish an understanding with Alberta Environment on the nature of the project and scope of the environmental study required. This will be accomplished by making a:

- Step 1 **Development Proposal** — describing the purpose of the pipeline, terminal and other control locations, commodity, diameter and length of line, ancillary facilities and project time frame.
- Step 2 **Preliminary Contact** — contact Alberta Environment to discuss the development proposal; preliminary environmental concerns; applicability of the Information Requirements; scope, mapping scale, and content of the environmental study. The applicant will be referred to other regulatory agencies if warranted.

### B. Route Selection

For information on incorporating environmental matters into route selection see: *The Route Selection Process: A Biophysical Perspective* ENR 1980; *Environmental Operating Guidelines for the Alberta Petroleum Industry* 1980 — Canadian Petroleum Association.

- Step 3 **Define Study Area** — describe the rationale for setting the study area boundaries. Criteria could be economic, e.g., (an elliptical area based on a line 10% longer than a straight line), intermediate tie-in points, and natural or administrative boundaries. Whatever the criteria, they should be rational and the proponent should be prepared to build through any part of the study area.
- Step 4 **Identify Alternative Routes** — on the basis of engineering and cost, system interrelationship and other government regulations, in addition to the environmental concerns. The paralleling of existing utility rights-of-way (e.g. other pipelines, powerlines, roads and cutlines) is encouraged wherever possible.
- Step 5 **Select Most Technically Feasible Routes** — employing criteria of engineering and cost, system interrelationship, other government regulations and environmental concerns.
- Step 6 **Describe and Analyse the Existing Environment** — in the area of the most technically feasible routes, not the entire study area. Refer to the checklist in Appendix 1. Unless otherwise required, the mapping scale will be at the regional level (1:250,000 to 1:50,000 on smaller projects) and the information base will consist of regional-level data, existing in many cases as published small scale maps.

The applicant is expected to present a comprehensive package of all information which is relevant to the comparison of the relative environmental impacts of alternative routes. A list of key contact agencies is provided in Appendix 2.

For more detail on the sources of environmental information, the applicant is referred to the *Natural Resources Information Directory* published yearly by Alberta Energy and Natural Resources and the *Environmental Operating Guidelines for the Alberta Petroleum Industry* published in 1980 by the Canadian Petroleum Association.

- Step 7 **Select Routes with the Least Environmental Impact** — by evaluating and comparing the relative environmental impacts using measurable criteria such as length of route through good agricultural land or number of archaeological sites affected. Qualitative ratings (e.g. High, Medium, Low) should also be used where appropriate, but should be explained.
- Step 8 **Identify Site Specific Environmental Impacts of Selected Routes** — by using more detailed information gathered from government agencies, land owners and libraries as well as *original field work*. Refer to checklist in Appendix 1. The mapping scale will be 1:50,000 or greater (e.g. 1:10,000).
- Step 9 **Refine Routes to Minimize Impacts** — avoid environmentally sensitive areas wherever possible by adjusting centre-line alignment. Document route refinements made. If the environmentally sensitive area cannot be avoided, then special attention should be paid to it as outlined in Step 10.

### C. Environmental Protection Plan

If environmental impacts cannot be avoided by route selection, then the impacts should be minimized as much as possible by adjusting the timing or method of construction. If the impact cannot be properly minimized, then the impact should be addressed by reclamation.

- Step 10 **Prepare Environmental Protection Plan** — consisting of environmental construction specifications for the entire route and environmentally sensitive areas, in particular. Show the information on your construction plans accompanied by “typical” drawings and written specifications incorporated into the Construction Specifications Book.

If project timing constraints or the inclusion of route selection alternatives make it impossible or undesirable to prepare the Environmental Protection Plan prior to an application (for a permit to construct) to the ERCB, then an application for a D & R Approval may be accepted without the Environmental Protection Plan.

However, the D & R Approval will not be issued until the Environmental Protection Plan has been submitted and reviewed by the government agencies involved. This review may require another 45 days. Not including Environmental Protection Plans in the original application may, therefore, cause additional delays after the ERCB permit to construct is issued.

The Environmental Protection Plan should be designed and prepared for field use by the contractor, the pipeline company environmental inspector and government reclamation officers.



## Environmental Protection Plan Concerns and Requirements

Concern	Environmental Construction Specifications For
Forestry	<ul style="list-style-type: none"> <li>— Minimizing interference with forestry operations</li> <li>— Minimizing risk of forest fire</li> <li>— Minimizing clearing</li> <li>— Salvaging merchantable timber</li> </ul>
Wildlife	<ul style="list-style-type: none"> <li>— Avoiding critical periods and minimizing disturbance</li> <li>— Enhancing habitat through vegetation management planning in all key wildlife areas</li> <li>— Special attention to river banks as high use areas</li> <li>— Controlling post-construction right-of-way access</li> </ul>
Fisheries	<ul style="list-style-type: none"> <li>— Avoiding critical periods — (construction timing windows)</li> <li>— Minimizing increased sediment loading</li> <li>— Storage or disposal of hazardous materials</li> </ul>
Erosion	<ul style="list-style-type: none"> <li>— Installing physical or mechanical erosion control structures where necessary</li> <li>— Revegetating the right-of-way</li> </ul>
Agriculture	<ul style="list-style-type: none"> <li>— Conserving topsoil</li> <li>— Minimizing rutting and compaction of soil</li> <li>— Minimizing of stoniness</li> <li>— Minimizing impacts on farm operations, crops, livestock, irrigation, and land drainage systems</li> <li>— Restoring agricultural productivity</li> </ul>
Recreation	<ul style="list-style-type: none"> <li>— Avoiding heavy use periods</li> <li>— Restoring the site following construction</li> <li>— Screening facilities such as gas plants or compressor sites</li> </ul>

### D. Review and Approval

**Step 11 D & R Application Submitted and Reviewed** — The application is submitted to the ERCB, which forwards a minimum of 10 copies to Alberta Environment for review by government agencies. The application should be as comprehensive as possible but should discuss only relevant environmental concerns. The application should comprehensively describe the methodology and the findings of the route selection process as well as documenting the Environmental Protection Plan. In the event additional information is required, the applicant will be notified.

Step 12 **D & R Approval** — The D & R Approval may be issued with or without conditions, or denied. When an Approval is issued, a security deposit is requested consistent with Part 3 of The Security Deposit Ministerial Regulations 172/77. The normal security is \$10,000, which must be received within 30 days of the issuance of the Approval or the Approval becomes invalid.

#### **E. Construction**

Step 13 **Put the Environmental Protection Plan into Practice** — by carrying out the environmental construction specifications as required. Review the environmental construction specifications during construction and revise them if not as effective as originally planned. Field approval by the Reclamation Officer will be required for all changes.

#### **F. Post-Construction**

Step 14 **Prepare An As-Built Environmental Report** — if requested by the chairman of the Land Conservation and Reclamation Council as authorized in Part 3, Section 10 of the Regulated Oil and Gas Pipeline Surface Operation Regulations. The report should describe the success or failure of the construction methods, the implementation of the Environmental Protection Plan, and should contain recommendations for similar future installations.

**CHECKLIST OF ENVIRONMENTAL PARAMETERS**

The following checklist is intended to cover all concerns which could affect the routing of a pipeline. *Only those items which affect the proposal under consideration should be addressed under Step 6. (Describe and Analyse the Existing Environment.)*

**A. Biophysical****Land Forms and Surficial Materials**

- origin and sensitivity

**Soils**

- classification and inventory, illustrating depth of topsoil, depth to toxic material
- problem soils; i.e., saline, poorly drained, acidic
- soil salvage and handling procedures
- soil replacement procedures

**Vegetation**

- species, geographical distribution, unique or endangered species

**Water**

- hydrology
- surface and subsurface drainage
- quality and drainage pattern as they relate to sensitive watersheds
- potential and proposed reservoir sites, water use permits
- ground water discharge sites (seepage areas and springs)

**Meteorology**

- weather patterns
- microclimatic features and abnormalities

**Environmental Sensitivities**

- a combination of two or more of the above biophysical components which may create environmental problems such as slope instabilities, erosional features or sensitive watersheds.

**B. Settlement Land Uses****Residential**

- existing and potential urban, country residential and rural developments, if plans and land use zoning are available; i.e., regional planning commissions, municipal districts and counties.

**Commercial Development**

- petrochemical plant sites, other manufacturing sites, retail facilities.



### **Institutions**

- agricultural experimental farms
- agricultural test plots

### **Facility-Based Recreation**

- private and public recreation facilities, trails, recreation areas; community recreation master plans

### **Indian Reserves and Metis Colonies**

## **C. Settlement Infrastructure**

“Settlement infrastructure” generally refers to transportation, energy movement, and communication facilities that are primarily linear developments, e.g., roads, pipelines, transmission lines. When project routes are being planned, the feasibility of paralleling existing rights-of-way must be investigated and documented in the application.

### **Transportation**

- roadways, including municipal, secondary and provincial highways
- railways
- airstrips, including private and commercial

### **Pipelines and Electric Transmission Lines**

- for transmission of oil, gas, water, solids and electric energy

### **Communication**

- radio and television transmitters
- Alberta Government Telephones cables
- satellite receiver stations

## **D. Resource Land Uses and Capabilities**

### **Agriculture**

- cultivation, condition and configuration of existing fields
- irrigation and associated facilities such as canals, reservoirs, and drainage ditches; potential for future irrigation related to known adequate water supplies
- potential for future drainage systems and future land development
- location of farmsteads
- grazing and forage
- grazing leases on Crown Lands, grazing association boundaries, grazing reserves

### **Forestry**

- timber merchantability
- timber leases
- timber development areas
- timber licences and permits

### **Mineral Resource Extraction**

- oil and gas wells
- economically mineable coal and oil sand deposits
- existing mine areas, leases
- sand and gravel leases and mineable deposits

### **Fauna**

- key wildlife habitat
- ungulate winter ranges, calving and lambing areas, migration routes
- waterfowl staging and production areas
- upland bird dancing and strutting grounds
- raptor nesting sites
- rare, unique, or endangered species
- traplines
- important stream and lake fish habitats
- fish spawning and rearing areas
- fish movement patterns
- rare and unique fish species
- commercial fisheries
- recreational fisheries

### **Historical Resources**

- historical resource potential within the study area and the immediate vicinity of technically feasible alternate routes should be determined in Step 6 of the route selection process. In addition, known prehistoric (archaeological), historic and palaeontological resources should be identified using archival information.
- the applicant may, at the request of Alberta Culture, be required to do an Historical Resources Impact Assessment during Step 8 to determine, through field investigations, the specific impact of the preferred route on historical resources.
- the Environmental Protection Plan (Step 10) should include a commitment to undertake, prior to construction, any further mitigative studies required by Alberta Culture.

### **Recreation**

- intensive recreation: present facilities and uses, e.g., national and provincial parks, municipal parks, Alberta Transportation and Alberta Forest Service campsites and all significant potential development sites.
- extensive recreation: present areas used for activities such as hiking, back country camping, cross-country skiing, hunting, snowmobiling, wildlife viewing, recreational driving, significant landscapes and areas that have potential for these types of development.

## APPENDIX 2

### KEY CONTACT AGENCIES

Department		Phone
Alberta Agriculture	— Land Use Activities Division	— 427-5359
Alberta Culture	— Archaeological Survey of Alberta	— 427-2355
Alberta Energy and Natural Resources	— Public Lands Division	— 427-5209
	— Alberta Forest Service	— 427-3583
	— Fish and Wildlife Division	— 427-6734
Alberta Environment	— Land Reclamation Division	— 427-6325
	— Water Resources Management Division	— 427-6168
	— Land Assembly Division	— 427-6208
Alberta Municipal Affairs	— Planning Services Division	— 427-2995
Alberta Recreation and Parks	— Design and Implementation Division	— 427-6781









N.L.C. - B.N.C.



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